

What we claim is:

1. A network control apparatus comprising:

a detector for detecting a packet passing through a network and a fact that a whole traffic quantity exceeds a predetermined threshold value,

a database for holding packet per-user-information detected by the detector,

a bandwidth managing portion for detecting a bandwidth occupant based on the per-user-information in the database and for selecting a corresponding bandwidth control method when the detector has detected that the whole traffic quantity has exceeded the predetermined threshold value, and

a bandwidth controller for performing a bandwidth control to the bandwidth occupant based on the bandwidth control method selected by the bandwidth managing portion.

2. The network control apparatus as claimed in claim 1 wherein the detector has a variable value as the predetermined threshold value.

3. The network control apparatus as claimed in claim 1 wherein the database has a utilizing status table per user including at least one of an average traffic quantity, an average communication data quantity, an average packet number, an average connection number, and an average session time as a parameter of the per-user- information.

4. The network control apparatus as claimed in claim 3 wherein the database includes a user ranking table indicating a ranking of users in respect of each parameter in addition to the utilizing status table.

5. The network control apparatus as claimed in claim 4 wherein the bandwidth managing portion detects a highest ranking bandwidth occupant at one specified parameter based on the user ranking table, determines whether or not a value of another parameter exceeds a corresponding predetermined threshold value by referring to the utilizing status table per user when the value of the specified

parameter at this time exceeds a corresponding predetermined threshold value, gives points indicating a bandwidth occupation degree when the threshold value is exceeded, and selects the bandwidth control method based on the point at this time.

5 6. The network control apparatus as claimed in claim 5 wherein the database has a bandwidth control method selection table indicating a correspondence between the point and the bandwidth control method, and the bandwidth control method has contents of a transmission of packet to a partition for a bandwidth occupant and a priority ranking  
10 at a time the packet is passed through the partition.

7. The network control apparatus as claimed in claim 5 wherein the bandwidth managing portion totals points of the parameters in the utilizing status table per user.

8. The network control apparatus as claimed in claim 7 wherein the  
15 database has a total point table per user indicating a correspondence between each user and the total point.

9. The network control apparatus as claimed in claim 8 wherein when the whole traffic quantity is less than the predetermined threshold value after performing the bandwidth control, the bandwidth  
20 controller sequentially releases the bandwidth control in order from a user with a smaller point based on the total point table per user, whereby the bandwidth managing portion clears the point of the user of which bandwidth control is released.